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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/678,923	10/04/2000	<i>h</i> Kenneth G. DeRoche	K-1633	7253

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04/02/2003

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EXAMINER

TSAI, HENRY

ART UNIT

PAPER NUMBER

2183

DATE MAILED: 04/02/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/678,923

Applicant(s)

DEROCHE ET AL.

Examiner

Henry W.H. Tsai

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-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/23/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/4/00 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, In claim 1, line 1 and 6, the "all effective cutting" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Note in accordance with Declaration mailed 1/23/03, Fig. 4 does not show "each flute acts as an entire cutting edge" since the item no. 7 of the Declaration defines the term of "all effective cutting" as a cutting tool wherein each flute acts as an entire cutting edge. There is a gap between two adjacent inserts within a flute as shown in Fig. 4.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35

U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As set forth above, the "all effective cutting" description in the specification and drawings is unclear. The "all effective cutting" is not well defined. Note the Declaration, mailed 1/23/03, defining the term of "all effective cutting" is questionable.

4. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claim 1, lines 1 and 6, and claim 8, line 7, it is not clear what is meant by "all effective cutting" since it was not well defined. Note the Declaration, mailed 1/23/03, defining the term of "all effective cutting" is questionable.

Applicant is required to review the claims and correct all language which does not comply with 35 U.S.C. § 112, second paragraph.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsujimura et al. (4,844,666).

Tsujimura et al. discloses the claimed invention comprising, as shown in Fig. 15, a tool body having an outer surface thereon and a central axis therein and including at least a first(including 24a) and second(including 24b) spiraling flute in the outer surface, each flute including a plurality of inserts(24a, 24b) secured therein to define an axial rake angle,

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wherein the axial rake angle of the inserts(24a, 24b) varies between flutes(e.g., changing from a1 to a4), and within each flute (changing from a1, a2, to a3 for the flute having inserts 24a) to provide all effective cutting. Note the combination of the cutting flutes provides all effective cutting

Note Tsujimura et al. also discloses the limitations described:

in claim 2, all of the inserts(24a, 24b) on the entire tool body being identical;

in claim 6, the cutting edges on adjacent inserts(such as 24a, 24a, Fig. 15) in any flute do not circumferentially overlap; and

in claim 7, the inserts(24a, 24b) each having a cutting edge and the cutting edges on inserts with differing axial rake angles have differing cutting edge lengths as shown in Fig. 15.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the

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art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 3-5, and 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsujimura et al. in view of Dutschke et al. (5,425,603).

Tsujimura et al. discloses the claimed invention except for: the tool body including three spiraling flutes(in claim 3); an the actual lengths of adjacent inserts in any flute circumferentially overlap(in claim 8).

Dutschke et al. discloses a cutting insert comprising the tool body including three spiraling flutes(18); the actual lengths of adjacent inserts in any flute circumferentially overlap as shown in Figs. 3a, 3b.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsujimura et al.'s insert to comprise the tool body including three spiraling flutes; and the actual lengths of adjacent inserts in any flute circumferentially overlap, as taught by Dutschke et al., in order to simplify the structure, and to facilitate the cutting process, such as better guiding the chip flow in different machining conditions for the Tsujimura et al.'s tool.

Note Tsujimura et al. also discloses:

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As to claims 4 and 10, all of the inserts(24a, 24b) on the entire tool body being identical;

As to claim 9, the inserts(24a, 24a) in the first flute being secured at a first axial rake angle while the insert(24b, 24b) in the second flute being secured at a second axial rake angle different from the first axial rake angle as shown in Fig. 15; and

As to claim 13, the actual lengths of adjacent inserts(such as 24a, 24a, Fig. 15) in any flute do not circumferentially overlap.

Response to Arguments

9. Applicant's declaration and arguments mailed 1/23/03 have been considered but are not deemed to be persuasive.

Applicants argue that the Tsujimura patent discloses a half effective cutting tool. See Declaration of Kenneth G. DeRoche(at page 4, item 4).

Examiner disagrees with Applicants. As set forth in the art rejections above, Tsujimura et al., as shown in Fig. 15, discloses the axial rake angle of the inserts(24a, 24b) varies between flutes(e.g., changing from a1 to a4), and within each

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flute (changing from a1, a2, to a3 for the flute having inserts 24a) to provide all effective cutting.

The item no. 7 of Declaration of Kenneth G. DeRoche, mailed 1/23/03, defines the term of "all effective cutting" as a cutting tool wherein each flute acts as an entire cutting edge. Examiner does not agree upon the definition of "all effective cutting". According to Col. 1, lines 38-49 of Patent No. 5,913,644, the above should be defined as --single flute "all-effective" milling(cutting)--.

Applicants further argue that both Tsujimura and Dutschke teach that cutting edges on adjacent inserts in a flute circumferentially overlap. Examiner disagrees with Applicants. As set forth above, Tsujimura et al. discloses the limitations described in claim 6, the cutting edges on adjacent inserts(such as 24a, 24a, Fig. 15) in any flute do not circumferentially overlap.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Contact Information

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry Tsai whose telephone number is (703) 308-7600. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Eddie Chan, can be reached on (703) 305-9712. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **TC 2100 receptionist whose telephone number is (703) 305-3900.**


12. In order to reduce pendency and avoid potential delays, Group 2100 is encouraging FAXing of responses to Office actions directly into **the Group at fax number:**

Official faxes: 703-746-7239; and

After Final faxes: 703-746-7238;

Customer Service faxes: 703-746-7240.

This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2100 will be promptly forward to the examiner.


HENRY W. H. TSAI
PRIMARY EXAMINER

March 28, 2003